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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/041,750	01/07/2002	Jason Klivington	4860P2739	3969

8791 7590 01/04/2006

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EXAMINER

AN, SHAWN S

ART UNIT	PAPER NUMBER
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2613

DATE MAILED: 01/04/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/041,750	Applicant(s) KLIVINGTON, JASON	
	Examiner Shawn S. An	Art Unit 2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 November 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Request for Continued Examination

1. The request filed on 11/14/05 for a Request for Continued Examination (RCE) under 37 CFR 1.114 based on parent Application No. 10/041,750 is acceptable and a RCE has been established. An action on the RCE follows.

Response to Amendment

2. As per Applicant's instructions as filed on 11/14/05, claims 1-3, 6-7, and 11-13, have been amended.

Response to Remarks

3. Applicant's arguments with respect to amended claims as above have been carefully reviewed but are moot in view of the new ground(s) of rejection incorporating previously cited prior art references.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-4 and 11-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tahara et al (5,657,086).

Regarding claims 1 and 11, Tahara et al discloses an apparatus/method comprising:

means for performing a first encoding transformation on a set of data representing a video frame as frame based-data to generate an array of frame based coefficient data (Fig. 13, 200; col. 16, lines 48-63);

means for performing a second encoding transformation on a set of data representing a video frame as field based-data to generate an array of field based coefficient data (Fig. 13, 201; col. 16, lines 64-67; col. 17, lines 1-3);

means for determining a number of high frequency coefficients within the array of the frame based data and field based data (col. 18, lines 7-20);

means for selecting either the frame based data or field based data based on the smallest quantity of data of high frequency coefficients in the frame based data and the field based data (abs.; Fig. 13, 255; col. 18, lines 21-27); and

means for converting an ordering of the arrays of selected data (58).

Tahara determines a number of high frequency coefficients within the array of the frame based data and field based data, and selects either the frame based data or field based data based on the smallest quantity of data of high frequency coefficients as discussed above.

Applicant's inventive features determines a number of non-zero coefficients within the array of the frame based data and field based data, and selects either the frame based data or field based data based, at least in part, on the (fewest) number of non-zero coefficients.

However, in a video compression standard such as MPEG, the high frequency coefficients tend to be zero (magnitude).

Therefore, it would have been obvious to a person of ordinary skill in the relevant art employing the apparatus/method as taught by Tahara et al to further incorporate the conventional video compression standard as stated above such that Tahara determines a number of non-zero coefficients within the array of the frame based data and field based data, and selects either the frame based data or field based data based, at least in part, on the (fewest) number of non-zero coefficients as an alternatively efficient way to select frame or field based data, since lower frequency coefficients are considered most important coefficients because it contains information regarding the average intensity of the block of pixels, and that high frequency coefficients are not very visible to human eyes, thereby providing very efficient encoding process.

Regarding claims 2-3 and 12-13, Tahara et al discloses performing a first and second DCT (200, 201) operation on the data representing the video frame to generate the frame based data and the field based data, respectively, and quantization (57) of results of the DCT operations.

Regarding claims 4 and 14, Tahara et al discloses means for comparing a macroblock of frame based data to a macroblock of field based data (abs.), and means for selecting the macroblock of data having the fewer number of high frequency coefficients (the smallest quantity of data) (Fig. 13, 255; col. 18, lines 7-27).

Therefore, it would have been obvious to select the macroblock of data having the fewer number of non-zero coefficients for the same reasons as set forth above.

6. Claims 5 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tahara et al as applied to claims 1 and 11 above, respectively, and further in view of Iizuka (5,767,910).

Regarding claims 5 and 15, Tahara et al does not particularly disclose means for performing zig zag conversion wherein an 8 X 8 matrix having an original order, and converting to having a scanning order of a zig-zag scan.

However, Iizuka teaches an encoding system, comprising a conventional scanning scheme including means for performing zig zag conversion, wherein an 8 X 8 matrix have an original order (Fig. 1, 408), which is converted to a scanning order of a zig-zag scan (Fig. 2).

Therefore, it would have been obvious to a person of ordinary skill in the relevant art employing the apparatus/method as taught by Tahara et al to further incorporate Iizuka's teachings as above for performing zig zag conversion, wherein an 8 X 8 matrix have an original order, which is converted to a scanning order of a zig-zag scan, thereby providing a conventionally effective scanning (zig zag) process.

7. Claims 6-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tahara et al (5,657,086) in view of Hall et al (5,737,020).

Regarding claim 6, Tahara et al substantially covers all of the claimed subject matter as discussed above with the exception of an article of manufacture comprising a software performing all of the claimed subject matter.

However, a software program performing an encoding operation is well known in the art.

Furthermore, Hall et al teaches that an encoding can be accomplished by hardware or by software (col. 4, lines 1-2).

Therefore, it would have been obvious to a person of ordinary skill in the relevant art employing the apparatus/method as taught by Tahara et al to incorporate the software program as taught by the Hall et al as an efficient way to encode or compress the transformed coefficients, thereby significantly saving manufacturing/operating costs associated with an expensive hardware.

Regarding claims 7-8, Tahara et al discloses performing a first and second DCT (200, 201) operation on the data representing the video frame to generate the frame based data and the field based data, respectively, and quantization (57) of results of the DCT operation.

Regarding claim 9, Tahara et al discloses means for comparing a macroblock of frame based data to a macroblock of field based data (abs.), and means for selecting the macroblock of data having the fewer number of high frequency coefficients (the smallest quantity of data) (Fig. 13, 255; col. 18, lines 7-27).

Therefore, it would have been obvious to select the macroblock of data having the fewer number of non-zero coefficients for the same reasons as set forth above.

8. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tahara et al and Hall et al as applied to claim 6 above, and further in view of Iizuka (5,767,910).

Regarding claim 10, the combination of Tahara et al and Hall et al does not particularly disclose means for performing zig zag conversion wherein an 8 X 8 matrix having an original order, and converting to having a scanning order of a zig-zag scan.

However, Iizuka teaches an encoding system, comprising a conventional scanning scheme including means for performing zig zag conversion, wherein an 8 X 8 matrix having an original order (Fig. 1, 408) being converted to having a scanning order of a zig-zag scan (Fig. 2).

Therefore, it would have been obvious to a person of ordinary skill in the relevant art employing the apparatus/method as taught by Tahara et al to further incorporate Iizuka's teachings as above for performing zig zag conversion, wherein an 8 X 8 matrix having an original order being converted to having a scanning order of a zig-zag scan, thereby providing a conventionally effective scanning (zig zag) process.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to *Shawn S. An* whose telephone number is 571-272-7324.

10. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Please note the new fax number.

11. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



SHAWN AN
PRIMARY EXAMINER

12/30/05